NFIRS 5.0 Self Study Program Wildland Fire Module: NFIRS 8

Objectives

After completing the Wildland Fire Module the student will be able to:

- 1. Describe when the Wildland Fire module is to be used.
- 2. Demonstrate how to complete the Wildland Fire Module and identify appropriate other modules given the scenario of a hypothetical incident.

Pre-Test #8 - Wildland Fire Module

1.	A Basic Module must be completed if the	ne Wildland Fire Module is completed.
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- (a) True
- (b) False
- 2. The Wildland Fire Module is a required NFIRS Module.
 - (a) True
 - (b) False
- 3. The Fire Module and the Wildland Fire Module can be completed for the same incident.
 - (a) True
 - (b) False
- 4. Buildings ignited as a result of a wildland fire are not exposure fires therefore do not require separate exposure reports.
 - (a) True
 - (b) False
- 5. The Wildland Fire Module can be used for non-hostile fires such as controlled burning and prescribed fires.
 - (a) True
 - (b) False

Wildland Fire Module Use

Wildland Fire Module Use

Historically, NFIRS data has not proven useful in understanding the nature and magnitude of the wildland fire problem. The "optional" Wildland Fire Module attempts to rectify this by capturing data about:

- The number of acres burned and the type of materials involved in these fires,
- Conditions which contribute to the ignition and spread of wildland fires, and
- The resources needed to control and/or extinguish these fires.

The purpose of the Wildland Fire Module is to document reportable wildland fires. A REPORTABLE wildland fire is any fire involving vegetative fuels that occurs in the wildland or urban-wildland interface areas, including those fires, which threaten or consume structures. To better understand the role of fire on the wildland ecosystem, prescribed fires are also included in this definition of reportable fires.

For the purpose of wildland fire reporting, note the following definitions:

Prescribed Fire–Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist prior to ignition (Incident Type 632). A prescribed fire that escapes management is a hostile fire-(Incident type 141 "Wildland Fire")

Urban-Wildland Interface Area—The geographical area in which structures and other human development meets or intermingles with wildland or vegetative fuels.

Urban-Wildland Interface Fire— Any fire, other than prescribed fire, where fire suppression tactics were influenced by a geographical area where structures and other human development meets or intermingles with wildland or vegetative fuels (Incident Type 141).

Wildland–An area in which development is essentially nonexistent, except for roads, railroads, power lines, and similar facilities.

Wildland Fire—Any fire other than a prescribed fire, involving vegetative fuels that occur in the wildland. A wildland fire may expose and possibly consume structures (Incident Type 141).

The Wildland Fire Module permits wildland fires to be profiled in depth for resource allocation, incident management, and fire impact analysis. In addition, aggregated data on wildland fires will provide invaluable information that can be used by policy makers developing codes and standards, zoning ordinances, and forest management plans.

Use the "optional" Wildland Fire Module when the Incident Type is coded as Forest, Woods or Wildland Fire (Incident Type 141), or a Prescribed Fire (Incident Type 632). In these cases, the Wildland Fire Module would be used in lieu of the Fire Module.

The Wildland Fire Module may also be used for the following incident types:

- 140 Vegetation Fire, Other
- 142 Brush, or Brush and Grass Mixture Fire
- 143 Grass Fire
- 160 Special Outside Fire
- 170 Cultivated Vegetation, Crop Fire, Other
- 171 Cultivated Grain, Crop Fire
- 172 Cultivated Orchard or Vineyard Fire
- 173 Cultivated Trees or Nursery Stock Fire
- 561 Unauthorized Burning
- 631 Controlled Burning (Authorized)

CONTROLLED BURNING VS. PRESCRIBED FIRE

Incident Type 631, "Controlled Burning" is used for fires where the burning is authorized and under control. Controlled burns are typically "agricultural" in nature and managed by the property owner. In order to meet the definition of a Prescribed Fire (Incident Type 632), a written, approved prescribed fire plan must exist prior to ignition.

These fires are typically carried out by a wildland management agency.

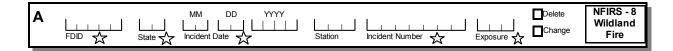
Both types of fires are considered non-hostile, and both presume that the Environmental Protection Agency (EPA) requirements are met prior to ignition.

NOTE: A prescribed fire that escapes management is a hostile fire—Incident Type is 141 (Wildland Fire). A hostile fire cannot become a prescribed fire, but the management strategy (actions taken) may change.

If it does not have a written, approved prescribed fire plan prior to ignition, it is not a prescribed fire—regardless of how it is managed (or how many times it escapes control). How the hostile fire is managed is the action taken.

Section A

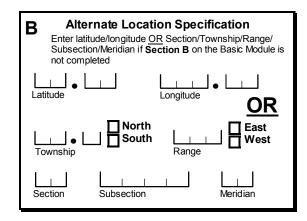
Section A: FDID, State, Incident Date, Station, Incident Number, Exposure



This information is consistent with the Basic Module. You can use it to recall the incident from the computer program or to print a hard copy of an incident. In an automated system, you can enter a data element once and it may automatically appear in all the fields where that information is required.

Section B

Section B: Alternate Location Specification



This section documents the geographical location of the wildland fire — use it in place of Section B of the Basic Module when traditional addressing methods are not suitable.

Enter both the latitude and longitude of the fire location OR the Township, Range, Section, Subsection, and Meridian. This information may be of value to local authorities for contacting the owner in connection with the fire and in making a long-term analysis of wildland fires in similar areas or on property under the same ownership.

Section C

Section C: Area Type

С	Area Type 🏠		
	1 ☐ Rural, farms >50 acres 2 ☐ Urban (heavily populated) 3 ☐ Rural/urban 4 ☐ Urban-wildland interface area		

This required section is a general description of the area in which the wildland fire occurred. By marking the appropriate box, it even allows for documentation of fires occurring in urban-wildland interface areas.

Aggregate information on the areas where wildland fires occur will help determine the level of risk for fires in densely populated areas versus those in rural areas.

Section D: Wildland Fire Cause, Human and Other Factors Contributing To Ignition, and Fire Suppression Factors

Section D

Block D₁ data identifies factors contributing to ignition in a wildland fire. The classification of ignition causes is consistent with the "General Fire Causes" adopted by the National Wildfire Coordinating Group (NWCG). The primary use of this information is to distinguish between human and nature-caused wildland fires.

Block D_1

D₁ Wildland Fire Cause ☆		
1	Natural source 8 Misuse of fire Equipment 0 Other Smoking U Undetermined Open/outdoor fire Debris/vegetation burn Structure (exposure) Incendiary	

The classification of "Wildland Fire Cause" represents a significant departure from the coding scheme used in the Fire Module where a combination of "Cause of Ignition" and "Factors Contributing to Ignition" are used to describe how and why the fire started. In fact, in some cases, the "Wildland Fire Cause" is not a "cause" at all, but an incident type or a factor contributing to ignition. This peculiarity is best illustrated by examining the following list of "Wildland Fire Causes" and their relationship to the Fire Module "Causes of Ignition."

FIRE CAUSE RELATIONSHIP TO NFIRS 2 CAUSE OF IGNITION

Wildland Fire Cause	Relationship to NFIRS 2 Cause of Ignition
1 Natural Source	4 Act of Nature
2 Equipment	3 Failure of Equipment or Heat Source
3 Smoking	2 Unintentional
4 Open or Outdoor Fire	Incident type would be outside fire (wildland fire would be exposure)
5 Debris/Vegetation Burn	2 Unintentional (Factors contributing would be outside/open fire for debris or waste disposal.
6 Structure	Incident type would be structure fire (wildland fire would be an exposure)
7 Incendiary	1 Intentional
8 Misuse of Fire	1 Intentional (or 2 Unintentional)
9 Other Causes	5 Cause under investigation.
0 Undetermined	U Cause undetermined after an investigation.

NOTE: "Wildland Fire Cause" is the only causal information required when using the Wildland Fire Module. However, completing the additional blocks provides a better understanding of how and why the fire started. In turn, this information can be used to target fire safety education and fire prevention programs.

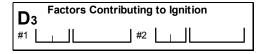
Block D_2

Human Factors Contributing To Ignition				
	Check as many boxes as are applicable.			
	Asleep			
2 [Possible alcohol or drug impairment			
3	Unattended person			
4 🗖	4 ☐Possibly mentally disabled			
	Physically disabled			
6	Multiple persons involved			
7	Age was a factor			
	- •			

Block D₂ offers a number of options to record human factors that might contribute to the ignition of a fire. Select all of the applicable factors by marking the appropriate boxes.

The data element "Age was a factor" is particularly useful in tracking juvenile firesetter trends. When used in combination with L₂-Gender of Person Involved and L₃-Age or Date of Birth, it can help define who was involved with the fire.

Block D_3



Block D_3 notes conditions or situations that contributed to the ignition of the fire. These factors help to clarify how a heat source and combustible material combined to start a fire. Up to two factors can be recorded, or if appropriate, "UU" can be selected. In several instances, the unique classification of "Wildland Fire Causes" limits the range of "Factors Contributing" that can be used.

Examples:

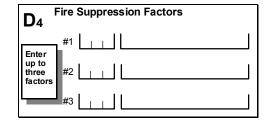
If the "Wildland Fire Cause" is recorded as "Smoking," the "Factor Contributing to Ignition" should be 11– Abandoned or discarded materials or products.

If the "Wildland Fire Cause" is recorded as "Structure," the Factor Contributing to Ignition should be 71– Exposure.

NOTE: The code set table used for this data element is the same set that is used for FACTORS CONTRIBUTING TO

IGNITION $-E_2$ in the Fire Module. Please see the codes listed for that data element in the Quick Reference Guide.

Block D₄

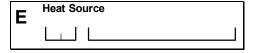


Use Block D_4 to document factors or conditions that affected the fire suppression effort or which affected the fire management strategy. Up to three factors or conditions that constituted a significant fire suppression problem or affected the means by which the fire was managed can be entered here.

NOTE: The code set table used for this data element is the same set that is used for FIRE SUPPRESSION FACTORS—G in the Fire Module. See the codes listed for that data element in the Quick Reference Guide.

Section E

Section E: Heat Source

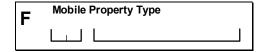


This refers to the specific source of the heat energy that started the fire. Examples include cigarette, cigarette lighter, match, or spark. Enter a code from the Quick Reference Guide.

NOTE: The code set table used for this data element is the same set that is used for HEAT SOURCE—D₂ in the Fire Module. See the codes listed for that data element in the Quick Reference Guide.

Section F

Section F: Mobile Property Type



Mobile Property Type refers to property that is designed and constructed to be mobile, movable under its own power or towed. Details regarding mobile property that either: (a) failed; (b) was used improperly; OR (c) while working properly provided the principal heat that caused ignition is collected in this section. If no mobile property was involved in ignition, this section should be left blank.

NOTE: The code set table used for this data element is the same set that is used for MOBILE PROPERTY TYPE – H_2 in the Fire Module. Please see the codes listed for that data element in the Quick Reference Guide.

Section G

Section G: Equipment Involved in Ignition

G	Equipment Involved in Ignition	
9		

This section allows for the documentation of equipment that provided the principal heat that caused ignition. The same type of information as noted above in Mobile Property Type can be recorded.

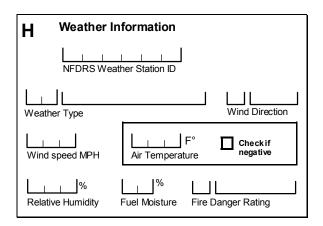
If no equipment was involved in ignition, this section should be left blank.

NOTE: The code set table used for this data element is the same set that is used for EQUIPMENT INVOLVED IN IGNITION – F₁ in the Fire Module. Please see the codes listed for that data element in the Quick Reference Guide.

Information on the type of equipment involved in ignition can be used to guide prevention, enforcement, and product design efforts. It is just as important to know the kind of equipment that was used improperly as it is to know the kind of equipment that malfunctioned. When involved in ignition, equipment information provides an important part of the causal data.

Section H

Section H: Weather Information



Record the six-character ID number of the NFDRS Weather Station, which monitors weather conditions at the location of fire origin, in the National Fire Danger Rating System (NFDRS) Weather Station ID field. Researchers can use this information to obtain specific weather data for the time and location of the fire origin. Specific weather data permits analysis of those conditions that may have contributed to the fire cause or spread.

The weather type field is used to record a general description of the weather type at the time and location of fire origin. Make a choice from the following list:

Weather Type

10 Clear: less than 1/10 cloud cover.

11 Scattered clouds: 1/10 to 5/10 cloud cover

12 Broken Clouds: 6/10 to 9/10 cloud cover

13 Overcast: 9/10 or more cloud cover

14 Foggy

15 Drizzle or mist

16 Raining

17 Snow or sleet

18 Shower

19 Thunderstorm in progress

00 Other weather type

Record the direction from which the wind was blowing at "eye level" in the wind direction field.

Example:

A wind blowing out of the north would push a fire to the south. This information helps in the investigation of fire causes as well as determining the rate of spread and direction of a fire.

The wind speed MPH field records the wind speed at the fire origin when fire suppression forces arrived. Enter the average wind speed (to the nearest mile-per-hour) at the fire origin. You can measure wind speed using an anemometer or it may be obtained from the weather station. Calm conditions are recorded as "0."

NOTE: Wind speed is possibly the most important factor affecting the rate of fire spread at an incident. This information is used to understand and predict fire behavior as well as to evaluate fire protection strategies.

The air temperature field documents the ambient air temperature in degrees Fahrenheit at the time and location of fire origin. Information about air temperature is used in fire modeling to assess the potential for ignition and to understand problems associated with suppressing fires in various weather conditions

Relative Humidity is a measurement of the ratio of the amount of water vapor to the greatest amount possible at the same temperature. Record the relative humidity at the time and location of fire origin here. It is expressed as a percentage from 0 to 100 percent. Information about relative humidity is used in fire modeling to assess the potential for ignition and rate of spread under various weather conditions.

The fuel moisture field records fuel moisture expressed as a percentage of total weight (generally ranging from 0 to 25 percent). Fuel moisture refers to the ten-hour reading of the moisture content of a fuel stick taken in the general area of the fire origin. Information about fuel moisture is used in fire modeling to assess the potential for ignition and rate of spread for different fuels under various weather conditions.

Record the fire danger rating in the Fire Danger Rating field. This entry refers to the National Fire Danger Rating System, one method of describing the wildfire threat in a particular area. It is derived from both constant and variable fire danger factors that affect the ignition, spread, and difficulty of control of fires and the damage they cause.

Factors considered when estimating the fire danger are temperature, relative humidity, wind speed, fuel type, and fuel moisture.

This information is used in fire prevention activities to determine when fires are most likely to occur and their severity. "Burning bans" and park or forest closures or restrictions may be invoked based on the Fire Danger Rating. It is also useful in pre-suppression planning to determine staffing levels and critical initial attack times.

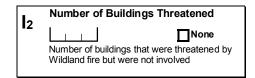
Section I

Section I: Number of Buildings Ignited, Number of Buildings Threatened, Total Acres Burned, Primary Crops Burned and Total Acres Burned

Block I_1

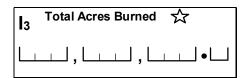
Block I₁ records a numerical expression of the total number of buildings, if any, that were ignited in the wildland fire. Each building ignited would be considered an exposure.

Block I2



If buildings were threatened but not ignited in the wildland fire, that number is noted in Block I_2 . This entry implies that these buildings were "saved" by the efforts of fire suppression resources. Therefore, it should only be used when the fire management tactics employed were for the specific purpose of protecting threatened structures.

Block I3



Block I_3 records the total acres burned by a wildland fire. Recording the estimated number of acres burned indicates the magnitude of each fire and of the wildland fire problem overall.

An estimated number of acres burned represent a vital component of the overall fire loss picture. This information can be used to evaluate progress in wildland fire prevention. It can also help determine the magnitude of resources that should be devoted to fire protection and the cost effectiveness of various programs.

This entry should be the most accurate estimate of acres burned that is practical to obtain (one-acre equals 43,560 square feet). Estimates based on the use of accurately scaled maps, dot grids, planimeters, or other accurate measuring methods are preferred. If less than one acre was burned, the decimal point field should be used to denote tenths of an acre.

Block I^4

I 4	Primary Crops Burned
lder	ntify up to 3 crops if any crops were burned
Cro	pp 1
Cro	pp 2
Cro	pp 3

Block I_4 collects information regarding up to three types of crops that burned. List the crop with the most acres burned first. If no crops were burned, leave this block blank.

Information about what type of crops burned in the fire is useful in tracking trends and patterns in wildland fires and planning prevention strategies.

Section J: Property Management

J Property Management			
Indicate the percent of the total acres burned for each owner- ship type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code.			
U	wnership % T	otal Acres Burned	
Private			
1 2	☐ Tax paying ☐ Non tax paying		
Pu	blic		
3 4 5 6	☐ City, town, village, local ☐ County or parish ☐ State or province ☐ Federal FederalAgency Code		
7 8 0	Foreign Military Other		

This section records the principal entity responsible for maintenance or control of property use where the fire originated. You may also record the percent of total acres burned for each type of ownership involved.

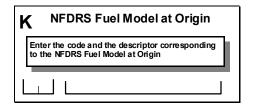
A record of the number of acres burned broken down by property ownership is of significant value to local fire departments as well as state and federal wildland agencies. It provides a means to determine the frequency and impact of fire on property managers, especially major holders of land such as ranchers, lumber and paper companies, agricultural producers, and federal and state governments. This information will help target fire protection programs to entities having the greatest risk or loss potential. This information also helps identify the entity responsible for reimbursing costs associated with fire suppression efforts.

Indicate the percent of the total acres burned for each type of ownership involved. Continue by marking the box that describes the principal entity with responsibility for the

property where the fire originated. If a federal agency has responsibility for the property, enter the five-digit Federal Agency Code in the space provided. Mark "U" if undetermined.

Section K

Section K: NFDRS Fuel Model at Origin



This data element identifies the type of wildland fuel involved in a wildland fire at the point of origin. Fuel models were devised to organize information about vegetative fuels for use in the National Fire Danger Rating System (NFDRS) to predict fire danger. The local forester should be able to assist you in identifying the fuel models in your area.

The proper entry in this field is the two-digit code and descriptor corresponding to the NFDRS fuel model that best identifies the type of vegetation burned at the point of origin.

NFDRS Fuel Model at Origin Codes A: Annual Grasses. 01 (less than 25 tons per acre) 11 02 B: Mature brush [6 ft.+] K: Light slash (less than 15 tons per 03 acre) C: Open pine with grass L: Perennial grasses 04 D: Southern rough 12 05 E: Hardwood litter 14 N: Saw grass, marsh needle-like grass 06 F: Intermountain west brush 15 O: High pocosin G: West Coast conifers; close, heavy 16 P: Southern long-needle pine Q: Alaska black spruce down materials 17 R: Hardwood litter (summer) 80 H: Short needle conifers; normal down 18 woody materials 19 S: Tundra T: Sagebrush with grass 09 I: Heavy slash, clear-cut conifers greater 20 21 U: Western long-leaf pine than 25 tons per area UU 10 J: Medium slash, heavily thinned conifers Undetermined

Section L

Section L: Person Responsible For Fire, Gender of Person Involved, Age or Date of Birth, and Activity of Person

Block L_1

L ₁	Person Responsible For Fire
1 <u>[</u> 2 <u>[</u> 3 <u>[</u>	Identified person caused fire Unidentified person caused fire Fire not caused by person

Block L_1 documents whether or not a person was responsible for the fire and whether or not that person was identified. If the person was identified, the rest of Section L should be completed.

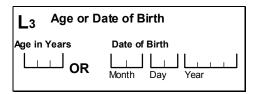
NOTE: If the person responsible for causing the fire is known, enter identifying information about the person in Block K_1 of the Basic Module or the Supplemental Module.

Block L_2

If person identified complete the rest of Section L			
L ₂	L ₂ Gender of Person Involved		
	1 Male		
	2 Female		

Information on the gender of persons involved—entered in Block L₂—can be used with other demographic information to identify fire problems in certain segments of the population and to target fire prevention and fire safety programs for certain audiences.

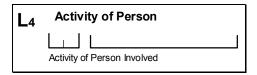
Block L₃



Block L₃ records the age or date of birth for the person identified as being responsible for the fire whether the cause was accidental or intentional.

This information can be used with gender and other demographic data to identify fire problems in certain segments of the population and to target fire prevention and fire safety programs for certain audiences. This data element is particularly useful in tracking juvenile firesetter trends when "Age was a factor" if noted in D_2 and gender (L_2) are considered.

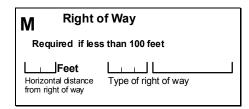
Block L₄



The entry in Block L₄ describes the primary activity of the person believed to have caused the fire. Prevention programs and strategy development on wildland fires are of utmost importance in continuing education on fire behavior. Collecting information on the primary activity of the person involved will assist in developing programs that better address the fire prevention needs of each activity.

Section M

Section M: Right of Way



Right of Way refers to the horizontal distance of fire-origin point from the edge of the traveled surface of a road or the nearest outside rail of a railroad right-of-way, or from the nearest power line or power transmission equipment of a utility right-of-way.

NOTE: This section is completed only for fires starting on or near (within 99 feet) of road, railroad, or power line right-ofways. This section contains two fields. In one, the actual measured or estimated horizontal distance (to the nearest foot up to 99 feet) of the point of fire origin from the right-of-way is entered. A description of the type of right-of-way near or on which the fire started is recorded in the second field.

Aggregate data about horizontal distances from rights-ofway provides information necessary to assess the risks of certain hazards and to develop hazard reduction strategies such as regulations for controlling combustible fuels along roads and other rights-of-way.

Section N

Section N: Fire Behavior

N	Fire Behavior	
	These optional descriptors refer to observations made at the point of initial attack]
	Elevation Feet	
	Relative position on slope	
	Aspect	
	Flame Length	
	Chains per Hour	

This section allows for the documentation of the topographical features and fire characteristics that contributed to the fire behavior. Information about fire behavior is used in fire modeling to assess the potential for fire ignition and rate of spread for different fuels under various conditions.

NOTE: These optional descriptors refer to observations made at the point of initial attack. Use of these descriptors will most likely be limited to wildland fire management agencies that are trained in making these observations.

The Elevation Field is used to record the numeric representation of the height above mean sea level, measured in feet.

The Relative Position on Slope field indicates the relative position of the fire on a slope. It can be coded as follows:

- 0 Valley Bottom
- 1 Lower Slope
- 2 Mid Slope
- 3 Upper Slope
- 4 Ridge Top

The Aspect field is the direction that the slope faces. This observation is coded as follows:

- 0 Flat/None
- 1 Northeast
- 2 East
- 3 Southeast
- 4 South
- 5 Southwest
- 6 West
- 7 Northwest
- 8 North

The Flame Length refers to the distance between the flame tip and the midpoint of the flame depth at the base of the flame (generally the ground surface) measured in feet.

The chains per hour field is used to record the measurement of forward-spread rate of the fire front (a "chain" is equivalent to 66 feet or approximately one foot per minute).

Summary

Summary

Use the "optional" Wildland Fire Module to document reportable wildland fires. A reportable fire is generally any wildland fire involving vegetative fuels that occurs in the wildland or urban-wildland interface areas. This includes fires that threaten or consume structures

It permits wildland fires to be profiled in depth for resource allocation, incident management, and fire impact analysis. Aggregated data on wildland fires will provide information that can be used by policy makers for developing codes and standards, zoning ordinances, and forest management plans.

EXAMPLE: GRASS AND BRUSH FIRE

Directions: Read the call information in the example below. Then look at the completed Wildland Fire Module Form. Look at each section and follow along with the proper use of the information as applicable to the Wildland Fire Module.

At 1550 hours, Fire Department FDID# TR100 was called to a grass and brush fire at several vacant fields and a small (½ acre) corn field, located at the intersection of a rural road with State Highway 162 just north of an apartment complex at the northern edge of the city.

The temperature was 75 degrees Fahrenheit, humidity only 5%. The wind was brisk, from the northeast at 15-20 miles per hour. There are two structures in the immediate area: a dwelling and a barn at the southwest corner of the corn field which is burning. Engines 2, 3 and 4 arrive at the scene at 1605 hours. The fire is moving rapidly toward the southwest and is about ½ mile from the exposed structures.

The fire service personnel set up a defensive line with ample water and prevented the fire from spreading. The exposed structures were protected. There were no victims. About 2.5 acres were burned completely, including the corn crop. The cause of the fire seems to be a discarded cigarette thrown from Highway 162.

$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	YYYY 0 0 2 0 0 1 0 2 0 0 0 0 1	Delete NFIRS - 8 Wildland Fire
Latitude Longitude OR 5 6 7 Township Section Subsection Subsection Meridian	Natural source 8 Misuse of fire Equipment 0 Other Smoking U Undetermined Open/outdoor fire Debris/vegetation burn Structure (exposure) Incendiary Human Factors Contributing To Ignition	Factors Contributing to Ignition #1 0 1 Discussed an oking #2
Area Type \$\frac{1}{\subset}\$ 2 3 1 \subseteq \text{Rural, farms >50 acres} 4 2 \subseteq \text{Urban (heavily populated)} 5 3 \subseteq \text{Rural/urban} 6 4 Urban wildland interface area	☐ Possible alcohol or drug impairment☐ Unattended person☐ Possibly mentally disabled☐ Physically disabled☐ Multiple persons involved☐ Age was a factor	F Cigarette
$\begin{array}{ c c c c c c } \hline \textbf{H} & \textbf{Weather Information} \\ & & & & & & & & \\ \hline & & & & & & & \\ \hline & & & &$	Number of Buildings Ignited Number of buildings that were ignited in Wildland fire Number of Buildings Threatened O O 2	Primary Crops Burned Identify up to 3 crops if any crops were burned Corn Crop 1 Crop 2 Crop 3
Property Management Indicate the percent of the total acres burned for each ownership type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code. Ownership W Total Acres Burned U Undetermined Private	MFDRS Fuel Model at Origin Enter the code and the descriptor corresponding to the NFDRS Fuel Model at Origin □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Required if less than 100 feet O_5 Feet
1	If person identified complete the rest of Section L L2 Gender of Person Involved 1 Male 2 Female L3 Age or Date of Birth Age in Years Date of Birth OR Month Day Year L4 Activity of Person Activity of Person Involved	0 6 0 0 0 Feet Elevation 4 Ridge top Relative position on slope 0 Flat top Aspect 0 1 Feet Flame 0 0 5 Chains per Hour Rate of spread

EXERCISE SCENARIO 8-1: BRUSH FIRE INCIDENT

Directions: Read the call information in the exercise below. Use the information provided to complete the Wildland Fire Module form. Compare your work to the answers provided on the subsequent completed Wildland Fire Module form. If your answers are different from the ones provided, read over the Wildland Fire Module again.

At 1000 hours Saturday, June 27, 1998, your Type 2 engine carrying three personnel was dispatched to a brush fire threatening homes in Carlysle Canyon. The location given was the SE 1/4 of the NE 1/4 of Section 34, Township 7N, Range 12W, San Bernardino (S.B.) Meridian. The weather at 1000 hours was 78 degrees F, 29 percent relative humidity, winds from the southwest at 6 m.p.h. and clear skies. Fuel moisture is estimated at 9 percent.

The fire was started adjacent to a hiking trail in the canyon bottom at an elevation of 1,250 feet. It is estimated at two acres in size when you arrive at 1040 hours. There is no vehicle access into the canyon. The fire is a slope driven one, with relatively slow spread (estimated at 127 chains per hour) with an average horizontal flame length of 12 feet. The fuel bed is medium to heavy brush (Fuel Model F) with good continuity. The canyon slope is 50 percent.

There are five homes located at the top of the slope, accessible by a 20-foot-wide access road. The wood construction homes, about 2,500 to 3,000 square feet each, are located one-forth of a mile apart with a minimal separation of brush between the structures. The fire, on the lower, northwest side of the slope is approximately three-fourths of a mile away from the closest structure.

In addition to the initial unit and crew members, four other Type 2 engines (each with a crew three) were dispatched to the fire. A chief officer is responding, but will not until 1200 hours. Two, Type 1 air tankers are available on request, both 20 minutes away. A re-load, if needed, will take 20 minutes also. One air-attach supervisor will respond upon request within 15 minutes. The ranking officer called for another alarm, with a minimum of five, Type 2 engines. Two USFS Type 1 hand crews (18 members each) are also requested. Immediate dispatch of two-Type 1 dozers, both Type 1 air tankers and the air attack supervisor is also requested.

The fire is at risk for making several up-slope runs at structures. Structure Number 1 is in the path of least resistance, with a low survivability factor and a high risk to firefighter safety. Structure Number 2 has only a moderate survivability factor in this situation, but also poses a high risk to firefighter safety. Apparatus and personnel are pre-positioned to protect the remaining structures (all structures have been evacuated). By the time the fire was brought under control (confined) at 1800 hours, it had burned 300 acres and destroyed two structures. The estimated property loss was \$300,000 of which \$50,000 was the contents of the two structures. There were no injuries or deaths associated with this fire.

After the fire, it was determined that a 20-year-old male hiking started the fire by carelessly discarding a cigarette into the dry brush. The fire started five feet away from the hiking trail in the canyon bottom on country open space property. 70 percent of the acreage burned was privately owned, the rest was county owned. The scene cleared at 0800 hours Sunday, June 28th. FDID TR100, WI, Wayne County Fire Department, Station 106, Incident 9805210.

A MM DD Incident Date	YYYY Station Incident Number	□ Delete NFIRS - 8 Wildland Fire
C Area Type 💢 2	Natural source Equipment Other Smoking Undetermined Open/outdoor fire Debris/vegetation burn Structure (exposure) Incendiary Human Factors Contributing To Ignition Check as many boxes as are applicable. Asleep Possible alcohol or drug impairment Unattended person Possibly mentally disabled Physically disabled	Factors Contributing to Ignition #1 #2 #4 #4 #4 #4 #4 #4 #4 #4 #4
Weather Information NFDRS Weather Station ID Weather Type Wind Direction Wind speed MPH Air Temperature Check if negative Relative Humidity Fuel Moisture Fire Danger Rating	Number of Buildings Ignited Number of buildings Ignited	Primary Crops Burned Identify up to 3 crops if any crops were burned Crop 1 Crop 2 Crop 3
Property Management Indicate the percent of the total acres burned for each ownership type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code. Ownership W Total Acres Burned U Undetermined Private 1 Tax paying Non tax paying Public	NFDRS Fuel Model at Origin Enter the code and the descriptor corresponding to the NFDRS Fuel Model at Origin L1 Person Responsible For Fire 1 Identified person caused fire 2 Unidentified person caused fire 3 Fire not caused by person If person identified complete the rest of Section L L2 Gender of Person Involved 1 Male 2 Female	Required if less than 100 feet Feet
3	Age or Date of Birth Age in Years Date of Birth OR Month Day Year L4 Activity of Person Activity of Person Involved	Aspect Feet Flame Length Chains per Hour Rate of spread NFIRS-8 Revision

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Enter latitude/longitude OR Section/Township/Range/ Subsection/Meridian if Section B on the Basic Module is not completed Latitude OR Township Area Type The Rural, farms >50 acres Urban (heavily populated) Runder Area Type 6 The Rural farms >50 acres Rural/Jurban Rural/Jurban Rural/Jurban A Rural/Jurban Longitude OR Range Reast Rest R	Natural source Equipment Smoking Open/outdoor fire Debris/vegetation burn Structure (exposure) Incendiary Human Factors Contributing To Ignition Check as many boxes as are applicable. Asleep Possible alcohol or drug impairment Unattended person Possibly mentally disabled Physically disabled Multiple persons involved Age was a factor	Fire Suppression Factors #1
$\begin{array}{ c c c c c c } \hline \textbf{H} & \textbf{Weather Information} \\ & & & & & & & & & & & \\ \hline & & & & & &$	Number of Buildings Ignited	Primary Crops Burned Identify up to 3 crops if any crops were burned No Crops Crop 1 Crop 2 Crop 3
Property Management Indicate the percent of the total acres burned for each ownership type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code. Ownership U Undetermined Private 1 X Tax paying 2 Non tax paying Public	NFDRS Fuel Model at Origin	Required if less than 100 feet
3		L7 Northwest Aspect L1 2 Feet Flame L1 2 7 Chains per Hour Rate of spread NFIRS-8 Revision

EXERCISE SCENARIO 8-2: VEHICLE FIRE ON I-95

Directions: Read the call information in the exercise below. Use the information provided to complete the entire Wildland Fire Module form and other required forms. Compare your work to the answers provided in Appendix A. If your answers are different from the ones provided, read over the Wildland Fire Module again.

The Alberta Fire Department (FDID 92188) responded to a vehicle fire on I-95 near mile marker 73 and Exit 2B in Brunswick, Virginia 23351 on May 3. The dispatcher assigned the incident (#5455) to Engine Co. 2 from Shift C. The unit received the alarm at 11:58 p.m. and arrived at the scene in six minutes with a four-person engine crew and a twoperson truck crew. Flame and smoke was coming from the vehicle. The owner of the vehicle, Mr. Robert L. Anderson, was driving to Emporia, Virginia to return his son, Joseph, to his mother. Mr. Anderson lives at 1630 Second Avenue, Jarrett, North Carolina 24501. His telephone number is 414-432-0987. He said that his front seat caught on fire. In an effort to extinguish the fire, the car crashed into the guardrail. He called 911 from his cellular telephone. He said that he was driving for two hours and became drowsy from a prescription drug that he took. The vehicle was a 1999 Ford Explorer, Virginia License Plate Number ACZ586, and VIN 1FBEU54X3ABC45634. The firefighters extinguished the fire; it was under controlled at 12:10 a.m. They determined that a burning cigarette caused the fire. The cigarette ignited the seat causing \$26,000 property damage and no content loss to the vehicle. The last unit cleared the scene at 12:35 a.m. FF1 Steve B. LaCivita, Badge No. 230, completed the report after returning to Station No. 1. Captain Ernest Greene, Badge No. 100, was the officer in charge. The fire department keeps records on the location of all responses. The incident was in Census Tract 501.2, District A05. The Virginia Department of Transportation, 23 Washington Street NE, Richmond, VA 23219, manages Virginia highways.

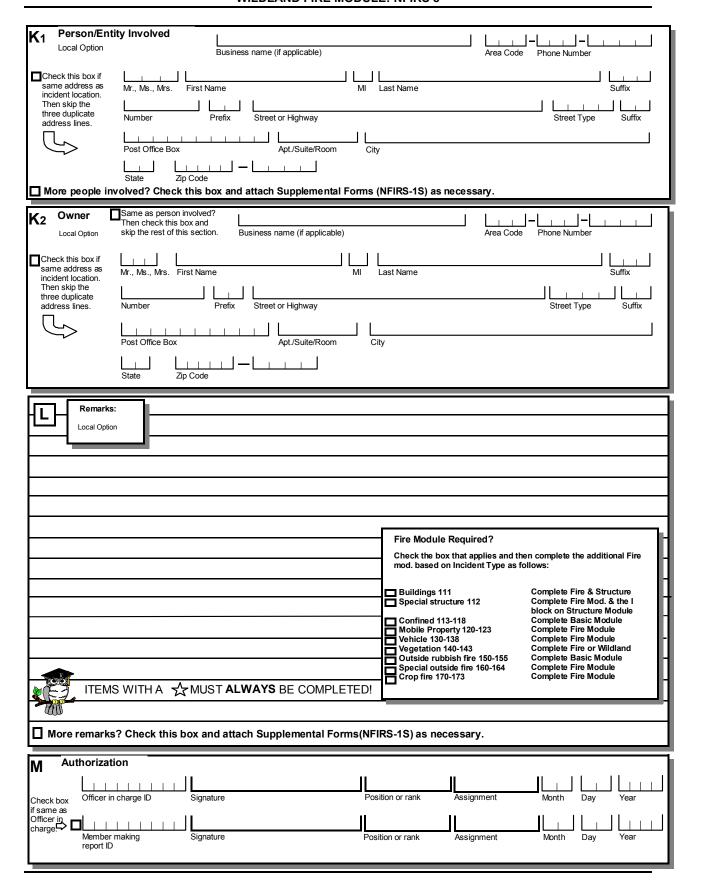
Mr. Anderson, 49-year old, black male, was bleeding from the head. He cut his head when his car hit the guardrail. He was not wearing a safety belt and the airbag in the vehicle did not inflate. Firefighter Steve Cooke, EMT-Basic, approached Officer Morrison at 12:06 a.m. Firefighter Cooke stopped the bleeding. No other treatment was needed. Mr. Anderson overall change in status improved. He was release to the on-scene towing service provider, Ace Towing, at 12:25 a.m. The towing service provider gave Mr. Anderson a ride from the incident

The dispatcher received a second call from a by-stander at the incident. He reported the fire and told the dispatcher that he saw cylinders in the cargo area of the vehicle. At 12 Midnight, the dispatcher notified the fire department and dispatched their two-person Hazardous Materials Truck from Station 2. The fire was out when the unit arrived at the scene. They found three cylinders in the cargo area of the vehicle. The cylinders contained Compressed Oxygen (UN# 1072, CAS Reg. #7782-44-7, DOT Hazard Class 2.2). The largest cylinder was leaking gas. The cylinder was a Type MM with a capacity of 122 cubic feet. The other two cylinders were Type M60 (60 Cu. Ft.).

The affected area was 15 square feet. The unit established a hazard control zone of 160 square feet. Even though, the hazard was on Interstate 95 and in an urban center, no people or buildings had to be evacuated because of the location of the incident. The HazMat Team moved the cylinders and stopped the leak. They estimated that 90 cubic feet of the gas escaped. There were no injuries resulting from the leak. The unit, last to clear the scene, left at 1:05 a.m.

The fire from the vehicle extended to an adjacent field of Annual Grass. The Virginia Department of Transportation owns the property at Latitude 37.55° North and Longitude 77.44° West. The area is urban. It was a clear night, with a wind speed of 10 MPH from the East, 62° F, and 70% relative humidity. The fuel moisture reading was 15% with a fire danger rating of moderate. The NFDRS Weather Station ID for the area was 091023. The one acre fire was extinguish by the four-person engine crew and the two person truck crew. There was no dollar loss to the property. The crew brought the fire under control at 12:40 a.m. The last unit cleared the incident at 1:05 a.m. Michael Harris, FF2 Badge No. 123, completed the report. Captain Ernest Greene was the Officer in Charge of the incident.

MM DD FDID State Incident Date	YYYY
	V State Zip Code
C Incident Type	E1 Dates & Times Month Day Year Hour Min
F Actions Taken Primary Action Taken (1) Additional Action Taken (2) Additional Action Taken (3)	G1 Resources Check this box and skip this section if an Apparatus or Personnel form is used. Apparatus Personnel Suppression EMS Check box if resource counts include aid received resources. G2 Estimated Dollar Losses & Values LOSSES: Required for all fires if known. Optional for non None Property \$
Completed Modules Fire-2 Structure-3 Civilian Fire Cas4 Fire Serv. Casualty-5 EMS-6 HazMat-7 Wildland Fire-8 Apparatus-9 Personnel-10 Arson-11 H1 ☆ Casualties Deaths Fire Service Livilian Civilian Livilian Detector Required for confined Detector did not alk Unknown	Injuries N None 1 Natural gas: slow leak, no evacuation or HazMat actions 2 Propane gas: <21 lb. tank (as in home BBQ grill) 3 Gasoline: vehicle fuel tank or portable container 4 Kerosene: fuel burning equipment or portable storage 5 Diesel fuel/fuel oil: vehicle fuel tank or portable storage 6 Household solvents: home/office spill, cleanup only 7 Motor oil: from engine or portable container 8 Paint: from paint cans totaling <55 gallons 6 Military use
J Property Use	Clinic, clinic type infirmary 539



A MM DD FDID State No Incident Date	YYYY Station Incident Number	Delete NFIRS - 8 Wildland Fire
Section Subsection Meridian C Area Type 2 3	Natural source 8 Misuse of fire Equipment 0 Other Smoking U Undetermined Open/outdoor fire Debris/vegetation burn Structure (exposure) Incendiary Human Factors Contributing To Ignition Check as many boxes as are applicable. None Asleep Possible alcohol or drug impairment Unattended person Possibly mentally disabled Physically disabled Multiple persons involved Age was a factor	F Actors Contributing to Ignition #1 #2 #4 #4 #4 #4 #4 #4 #4 #4 #4
Weather Information NFDRS Weather Station ID Weather Type Wind Direction Wind speed MPH Air Temperature Check if negative Relative Humidity Fuel Moisture Fire Danger Rating	Number of Buildings Ignited	Primary Crops Burned Identify up to 3 crops if any crops were burned Crop 1 Crop 2 Crop 3
Property Management Indicate the percent of the total acres burned for each ownership type then check the ONE box to identify the property ownership at the origin of the fire. If the ownership at origin is Federal, enter the Federal Agency Code. Ownership W Total Acres Burned U Undetermined Private 1	NFDRS Fuel Model at Origin Enter the code and the descriptor corresponding to the NFDRS Fuel Model at Origin L1 Person Responsible For Fire 1 Identified person caused fire 2 Unidentified person caused fire 3 Fire not caused by person If person identified complete the rest of Section L L2 Gender of Person Involved 1 Male	Required if less than 100 feet Feet
Public 3	Age or Date of Birth Age in Years OR OR Activity of Person Involved	Relative position on slope Aspect Feet Flame Length Chains per Hour Rate of spread NFIRS-8 Revision

Wildland Fire Module Test

- 1. Which statement is not correct? The Wildland Fire Module captures data about:
 - (a) the number of acres burned and the type of materials involved in wildland fires
 - (b) conditions which contribute to the ignition and spread of wildland fires
 - (c) the resources needed to control or extinguish wildland fires
 - (d) actions needed to prevent unauthorized access to wildland properties
- 2. Controlled Burning and Prescribed Fire have the following in common:
 - (a) A written, approved fire plan exist prior to ignition
 - (b) Non-hostile fires
 - (c) presume that Environmental Protection Agency requirements are met prior to ignition
 - (d) managed by the property owner
- 3. Which data element is not an example of weather information collected on the Wildland Fire Module?
 - (a) Weather Type
 - (b) Elevation
 - (c) Relative Humidity
 - (d) Fire Danger Rating
- 4. Which data element is not an example of fire behavior collected on the Wildland Fire Module?
 - (a) NFDRS Fuel Model
 - (b) Elevation
 - (c) Relative position on slope
 - (d) Rate of spread
- 5. Which data element allows the documentation of the topographical features and fire characteristics that contributed to the fire performance?
 - (a) Factors Contributing to Ignition
 - (b) Weather Information
 - (c) Fire Behavior
 - (d) Property Management